

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Planetary Radar
 Sub-Category: Radar
 Observation Category: Solar System
 Total Time Requested: 24 Hours
 Minimum Useful Time: 4

Proposal Title: Lunar Subsurface Radar Mapping at 70-cm Wavelength

ABSTRACT:

We request 24 hours of Arecibo-GBT time to acquire targeted 70-cm wavelength, dual-polarization radar backscatter maps of the Moon. The new observations will use a 1-us baud length and about 5 hours of integration time on each target to achieve 200-m spatial resolution with 8 looks per pixel. We recently published a study of Mare Serenitatis using such data, revealing unseen details of lava flow complexes, possible channels and tubes, and early mare tectonic features. Data collected for Mare Imbrium delineate lava flow outlines never before evident, allowing comparisons to the scales of similar features on Earth and Mars. Our new observations will use the same techniques to study volcanic deposits in the Mons Rumker region, map lava flow features across Mare Humorum and Mare Nubium, and probe the north polar region to investigate published claims of thick ice deposits in small craters.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

430 Xmit

Atmospheric Observation Instruments:

Special Equipment or setup: No receiving at Arecibo, so no data recording requirements.

RFI Considerations

Frequency Ranges Planned